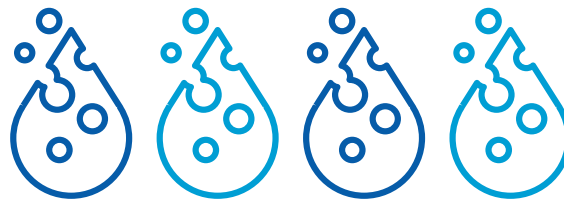


ACTIVITY 3: INVESTIGATING CORROSION

The purpose of this activity is to explore the process of corrosion by examining the effects of different liquids on various metal objects.



Materials

- Three small metal objects (nails, paperclips, or coins)
- Clear plastic cups/containers, 3 per group
- Water
- Saltwater (mix salt in water to create a solution)
- Vinegar
- Baking soda solution (mix baking soda in water to create a solution)
- Labels or markers
- Paper towels or cotton swabs
- Safety goggles
- Notebook or loose leaf paper

First, inform students that they will be working with a small group to investigate **corrosion**. Begin by discussing what corrosion is and its effects on metals. Explain that corrosion is a natural process that occurs when metals react with substances in their environment. Emphasize that different liquids can have varying effects on metals, and this experiment will help them observe and compare those effects.

Next, divide students into small groups and provide them with the necessary materials. Assign each group one metal object (nail, paperclip, or coin) and three cups labeled as Water, Saltwater, and Vinegar. Remind students to wear safety goggles to protect their eyes during the experiment.

Then, instruct students to fill each cup with the corresponding liquid: water in one cup, saltwater in another, and vinegar in the third cup. Have students place their assigned metal object in each cup, ensuring that each object is fully submerged in the liquid.

Explain that the experiment will run for a certain duration (e.g., overnight). Have students make predictions about which liquid they think will cause the most corrosion on the metal object and write them down. During the waiting period, students should make particle diagrams of the object that's in each container to represent what they think is happening before, during, and after the change. They can discuss their predictions with their groups, make observations, or note changes they observe in the cups as they wait.

Last, after the designated time has passed, have students carefully remove the metal objects from each cup and examine them. Provide paper towels or cotton swabs for students to dry and clean the metal objects. Instruct students to compare the appearance of each metal object, noting any differences, changes in color, texture, or signs of corrosion. Have them compare their findings to their predictions and to draw a particle diagram that they think represents what actually happened.

Facilitate a class discussion where students share their observations and compare their predictions with the actual outcomes.

Extension Idea

Make this lab quantitative by have students take the mass of their metal objects before putting it in the saltwater, vinegar, or baking soda, and then massing it again after the designated time to sit in the container and after cleaning it off and drying it. They should see a change in mass, and their particle diagrams can help to interpret what this means happened.